

Appl. No. 09/627,591
Amdt. dated Apr. 21, 2004
Reply to Office Action of Jan. 21, 2004

Listing of Claims:

The below listing of claims will replace all prior versions, and listings, of claims in the application. Claims 1, 6, 15, 32, 34, and 35 have been amended. Previously withdrawn claims 17-31 and 39 are being pursued in a divisional application. Claims 5, 9-14, 16, 32, 33, 37-39, and 40-46 have been canceled without prejudice. No new matter has been added.

Claims 1 (currently amended): A golf ball comprising a core, wherein the core comprises nanocomposite material, wherein the nanocomposite material comprises a polymer having a structure in which particles of inorganic material are reacted and substantially evenly dispersed, and wherein each particle has a largest dimension that is about one micron or less and that is at least an order of magnitude greater than such particle's smallest dimension.

Claim 2 (original): A golf ball as defined in claim 1, wherein the polymer is selected from the group consisting of polyamide, ionomer, polycarbonate, polyurethane, polystyrene, fluoropolymer, polyamide elastomer, polyester elastomer, polyester, polyolefin, thermoplastic elastomer, thermoplastic vulcanizate, and epoxy resin, and mixtures thereof.

Claim 3 (original): A golf ball as defined in claim 1, wherein the particles of inorganic material consist essentially of claim.

Claim 4 (original): A golf ball as defined in claim 3, wherein the clay is selected from the group consisting of hydrotalcite, montmorillonite, micafluoride, and octosilicate.

Claim 5 (canceled).

Claim 6 (currently amended): A golf ball as defined in claim ~~5~~ 1, wherein the core comprises about 1 to about 50 percent by weight nanocomposite material.

Appl. No. 09/627,591
Amdt. dated Apr. 21, 2004
Reply to Office Action of Jan. 21, 2004

Claim 7 (original): A golf ball as defined in claim 6, wherein the core comprises about 1 to about 40 percent by weight nanocomposite material.

Claim 8 (original): A golf ball as defined in claim 7, wherein the core comprises about 5 to about 30 percent by weight nanocomposite material.

Claims 9-14 (canceled).

Claim 15 (currently amended) : A golf ball having a core as defined in claim 1, wherein: the golf ball further comprises ~~a core~~, a layer of rubber thread encasing the core, and a cover layer encasing the layer of rubber thread; ~~and~~
~~the core comprises nanocomposite material.~~

Claim 16-31 (canceled).

Claim 32 (currently amended): A golf ball having a core or a layer surrounding the core comprising from about 10 to about 20 percent by weight of nanocomposite material, wherein the nanocomposite material comprises a polyamide in the structure of which phyllosilicate particles are substantially evenly dispersed, wherein each phyllosilicate particle has a largest dimension that is about one micron or less and that is at least an order of magnitude greater than such phyllosilicate particle's smallest dimension;

wherein the golf ball further comprises a block copolymer.

Claim 33 (canceled).

Claim 34 (currently amended): A golf ball as defined in claim ~~33~~ 32, wherein the amide block copolymer is a polyether amide block copolymer.

Claim 35 (currently amended): A golf ball as defined in claim 32, ~~further comprising a block copolymer, wherein~~ the block copolymer comprises:

a first polymer block comprising an aromatic vinyl compound;

Appl. No. 09/627,591
Amdt. dated Apr. 21, 2004
Reply to Office Action of Jan. 21, 2004

a second polymer block comprising a conjugated diene compound; and
a hydroxyl group located at a terminal block copolymer.

Claim 36 (original): A golf ball as defined in claim 32, further comprising the
hydrogenation product of a block copolymer, comprising:

a first polymer block comprising an aromatic vinyl compound;
a second polymer block comprising a conjugated diene compound; and
a hydroxyl group located at a terminal block copolymer.

Claim 37-46 (canceled).